

ABSTRACT OF THE DISCLOSURE

A structural system for accurately reproducible *in situ* x-ray studies of operating rechargeable electrochemical battery cell electrode components comprises an hermetically sealed cell component enclosure incorporating an x-ray transmissive window member of beryllium or the like. A research embodiment of the system comprises means for rapidly and consistently interchanging electrode compositions for operative comparison and evaluation, while a laminated cell system embodiment enables accurate testing of electrode components in commercial configurations such as unitary polymeric Li-ion battery cells.